We much regret to see the announcement of the death on March 9 of M. Lucien Poincaré, Vice-Rector of the University of Paris, at fifty-eight years of age.

Dr. Samuel Hatch West, who died on March 2 at the age of seventy-one, was well known in London as a consulting physician. He was trained at Oxford under Rolleston and Acland, and as Radcliffe travelling fellow he studied in Vienna and Berlin. He was physician to the Royal Free Hospital and to the City of London Hospital for Diseases of the Chest, but his life's work was carried out at St. Bartholomew's Hospital, where he received his medical education, and held successive medical appointments until he became full physician. Dr. West was a successful clinical teacher, and many generations of students will be grateful to him for the thorough manner in which he taught them to examine a patient, system by system, so that no important organ could be overlooked. Dr. West deserved his high reputation as a careful clinical observer. Diseases of the lungs were his particular study, and on this subject he produced a monograph in two volumes which is a monument of industry and a veritable mine of information. He delivered the Lettsomian lectures at the Medical Society of London in 1900, taking as his subject "Granular Kidney," but it is by his teaching and his work on diseases of the lungs that he will best be remembered.

A correspondent, "G. P. B.," writes:—"All zoologists who have ever worked at the 'Stazione Zoologica' of Naples will be grieved to read of the death of Prof. Eisig whose obituary notice by Prof. R. Dohrn appears in the Zürich *Zeitung* of February 19. Hugo Eisig was born in Baden in 1847. When Anton Dohrn, aged thirty-one, decided to sink his whole fortune in the building of the Naples station, knowing that it would suffice to rear up only the ground story, his friend Kleinenberg went with him; Eisig, seven years their junior, offered himself also, and was accepted. Many years of great difficulty followed, and then many years of very great success. Through all Eisig continued the career which he had chosen as part and parcel of the Stazione Zoologica. His contribution to zoology is not to be measured by his published work, even though it includes his great 'Monograph of the Capitellidæ.' To all of us who worked at Naples he was a friend, loyal, sympathetic, unselfish, and gentle. In 1907 Eisig retired on a pension from his administrative post in the Zoological Station, but continued his own zoological work. Two years later Anton Dohrn died, and was succeeded by his able son, but in 1915 Prof. Reinhard Dohrn, with Eisig and others of the staff, had to leave Naples for the hospitality of the Zürich Zoological Museum and Swiss territory. There Eisig died on February 10 last from the after-effects of an operation which appeared to have been successful. He died in exile from his home of forty-four years, but in the warm memory of many friends all over the world."

Notes.

A meeting convened by the Chancellor of the University of Cambridge and the president of the Royal Society was held on Thursday, March 4, at the rooms of the Royal Society, to consider the question of a memorial to the memory of Lord Rayleigh. After a preliminary statement by the president of the Royal Society announcing the purpose of the meeting, speeches in favour of the proposal to erect a memorial were made by Mr. A. J. Balfour, Sir Charles Parsons, Dr. P. Giles (Vice-Chancellor of the University of Cambridge), Sir Arthur Schuster, Sir Richard Glazebrook, and Sir Joseph Larmor. It was agreed that a fund should be raised for the purpose of placing a memorial, preferably a window, in Westminster Abbey. A general committee was appointed, as well as an executive committee, to consider details, and also the further question of raising a fund in memory of Lord Rayleigh, to be used for the promotion of research in some branch of science in which Lord Rayleigh was specially interested.

A public meeting was held in the University Museum, Oxford, on March 6, to initiate a memorial to the late Sir William Osler, Bart., Regius professor of medicine in the University for the past fifteen years. The Vice-Chancellor presided. Sir Clifford Allbutt, who introduced the proposal, paid a feeling and eloquent tribute to the memory of Sir William Osler, to the wide range of his intellect, and to the singular charm of his character. He referred to his international reputation and to the binding influence he had on the medical profession in many lands, to his love of peace and goodwill, and to the extraordinary power he exerted in diffusing without diluting friendship. The president of Magdalen, Sir Herbert Warren, mentioned the many-sidedness of Osler's interests and activities, the breadth and accuracy of his scholarship, and the clear and steady optimism with which he regarded life and its progress in all ages. Sir William Church, who introduced the specific proposal that the memorial should take the form of an Osler Institute of General Pathology and Preventive Medicine, stated that such a memorial as that suggested would be a singularly appropriate tribute to the outlook and ideals that Osler had kept before him in his life-work. Prof. Thomson emphasised the need of new laboratory accommodation in Oxford for teaching and research. The Dean of Christ Church and Sir Archibald Garrod also spoke. It was announced that the hon. secretary, Prof. Gunn, had received expressions of sympathy with the proposed memorial from a large number of people representing many interests, and that a collateral committee had been formed in America to aid in raising the memorial.

A movement has been started to commemorate the life and work of the late Sir James Mackenzie Davidson by an appropriate memorial. The proposal is that steps should be taken to found a Mackenzie Davidson chair of radiology at some university, but, whereas nothing could be more fitting as a memorial to the work of one who devoted a large part of his life to the development of the subject of radiology, it is urged by the thirty signatories of the appeal that, if the wider claims of the subject are to be met, there should be an X-ray institute. The applications of X-rays in medicine have vastly extended both in diagnosis and in treatment during the last ten years, but the new knowledge as to the properties of X-rays revealed by crystal analysis has opened out many new fields both of investigation and of application. If the subject is widening in these respects, there are signs no less clear of a growing need for improved teaching in the many fields of X-ray activity. The institution of a diploma in radiology by the University of Cambridge is but one indication of the demand that exists at the present day for instruction in the subject of X-rays. A well-equipped and well-organised institute seems the most likely way in which the multifarious interests of X-rays can best be welded into an efficient working whole, and it is hoped that the response to the appeal will ensure that the brilliant X-ray work done in this country may be augmented.

THE first post-war meeting of the International Council for the Exploration of the Sea was held in London last week, March 2–6. The countries represented were Belgium, Britain, Denmark, Finland, France, Holland, Norway, and Sweden. France sent a delegate for the first time, and the United States of America was informally represented. The British Government entertained the delegates and others at a dinner at Lancaster House, the Royal Society held a reception at Burlington House, and the Trustees of the British Museum and the Royal Geographical Society also received the delegates. The meeting resolved itself into a number of sections for the consideration of particular questions; these were the formulation of a scheme of research to enable the various Governments to make a convention for the better regulation of the North Sea fishing-grounds; the future conduct of the hydrographic and plankton researches; biological, statistical, and historical investigations with respect to the herring; the European eel fisheries; the fisheries of the seas to the south-west of the British Isles; a limnological survey; international fishery statistics; and certain basal physical and biochemical matters. Much interest was exhibited with regard to the "plaice problem," and the section concerned held several meetings. The hydrographic sectional meetings were very interesting, but it was clear that no immediate results were to be expected. The *personnel* of the Council had not undergone much change. In the death of Sir John Murray the organisation has suffered a great loss, but the genial and forceful personality of Dr. Johan Hjort is still an asset of much value. Prof. Otto Pettersson vacated the chair to Mr. H. G. Maurice, of the English Ministry of Agriculture and Fisheries, to whom the continued existence of the international investigations throughout the period of war is largely due.

ACCORDING to the *British Medical Journal*, Sir Frederick Banbury's Bill to Prohibit the Vivisection of Dogs is down for second reading on March 19. It will be remembered that when the same Bill was introduced last year a Government amendment allowing experiments to be made on dogs under special certificates was carried. The title was also changed. Sir Frederick Banbury himself moved the third reading with these amendments. The Bill was, however, rejected. It is now brought forward again in the form in which it existed before the Government amendments—that is, prohibiting all experiments on dogs. Although there seems some hope that the prospects of its progress in Parliament are not very favourable, its unexpected temporary success last year must not be forgotten, and careful watch is imperatively necessary. It is inconceivable that the Government can allow a Bill of this kind to pass, nullifying, as it does, the activities of so many of their Departments. Sir Frederick Banbury admitted that he had "failed to mention" the safeguards against possible cruelty already existing in the Statute Book. The opinion of the medical profession is sufficiently shown by the unanimous vote of the clinical and scientific meeting of the British Medical Association in London last April. It was agreed that such prohibition of experiments on dogs would have a deplorable effect in hampering the progress of physiological and pathological investigation, since many important fields of research are only available when dogs can be used. They are the only large animals that can be kept in health and comfort under laboratory conditions.

THE admission of qualified medical women to the fellowship of the Royal College of Surgeons of Edinburgh reminds us of the fight waged in the late sixties and early seventies of last century for the admission of women to the classes and examinations of the faculty of medicine of the University of Edinburgh. The fight was lost by the gallant band of women—*septem contra Edinem*. It has been fought and won in the fifty intervening years, and this resolution of the Royal College marks the fall of the last barrier to equality of the sexes in medical education in this ancient seat of learning. Women medical students have recently been admitted to the complete courses in the faculty of medicine, and the extra-mural Edinburgh School of Medicine for Women has been merged into the University. It remains to be seen whether the new *régime* will justify those who have borne much anxiety and labour to promote it. We believe it will. The Scottish women proved their quality in the hospitals they equipped and staffed in the various seats of war. They have started a small hospital in Edinburgh staffed by women only. There is an increasing body of medical women and women students attached to the University, and among them will be found doubtless the same capacity for work and leadership which was so nobly exemplified by the late Dr. Elsie Inglis. With all the examinations open to women which lead to hospital staff appointments, it is hoped that an increasing number of highly qualified women will present themselves as candidates when vacancies occur, and that appointments will be open to merit irrespective of sex. Much of the work to be done in the future in the State-aided hospital is obviously of a character to demand the services and judgment of qualified medical women.

The twenty-sixth James Forrest lecture will be delivered at the Institution of Civil Engineers on Tuesday, April 20, at 5.30 p.m., by Sir Dugald Clerk, K.B.E., F.R.S., upon the subject of "Fuel Conservation in the United Kingdom."

Prof. A. Fowler, professor of astrophysics, Imperial College of Science and Technology, South Kensington, and president of the Royal Astronomical Society, has been elected a corresponding member of the Paris Academy of Sciences, in the section of astronomy, in succession to the late Prof. E. Weiss, of Vienna.

Prof. J. Stanley Gardiner has, at the request of the Deputy-Minister of Fisheries, undertaken temporarily the direction of the scientific work of the Fisheries Department of the Ministry of Agriculture and Fisheries. Prof. Gardiner's particular duty will be to restart fishery investigations, which have necessarily been in abeyance during the war.

The Faraday Society has arranged a general discussion on "Basic Slags: Their Production and Utilisation in Agricultural and other Industries," to be held on Tuesday, March 23, from 7.30 to 10.30, in the rooms of the Chemical Society, Burlington House, London, W.1. Prof. F. G. Donnan, vice-president, will preside over the discussion, and there will be papers by Dr. E. J. Russell, Prof. C. H. Desch, Sir T. H. Middleton, Sir Daniel Hall, Prof. D. A. Gilchrist, and others.

The U.S. National Research Council has received a gift from the Southern Pine Association of 10,000 dollars to meet the incidental expenses of a co-ordinated scientific study by a number of investigators of the regrowth of trees on cut-over forest-lands, with the view of determining the best forestry methods for obtaining the highest productivity. The investigation will be conducted under the advice of the Research Council's special committee on forestry, and will not duplicate any present Government or other undertakings along similar lines.

It was announced at the ordinary scientific meeting of the Chemical Society on March 4 that the following had been proposed for election as honorary and foreign members, and that a ballot for their election would be held on March 18: W. D. Bancroft, V. Grignard, H. Kamerlingh Onnes, E. Paterno, P. Sabatier, J. B. Senderens, S. P. L. Sörensen, and G. Urbain. The annual general meeting of the society will be held at Burlington House on Thursday, March 25, at 5 p.m., to receive the address of the president, Sir James J. Dobbie, and to elect the officers and council for the ensuing year.

The following officers and council of the Geological Society have been elected for the ensuing year:—*President:* R. D. Oldham. *Vice-Presidents:* Prof. E. J. Garwood, G. W. Lamplugh, Col. H. G. Lyons, and Prof. J. E. Marr. *Secretaries:* Dr. H. H. Thomas and Dr. H. Lapworth. *Foreign Secretary:* Sir Archibald Geikie. *Treasurer:* Dr. J. V. Elsden. *Other Members of Council:* Dr. F. A. Bather, Prof. W. S. Boulton, R. G. Carruthers, Dr. A. M. Davies, J. F. N. Green, R. S. Herries, J. Allen Howe, Prof. O. T. Jones, Prof. P. F. Kendall, W. B. R. King, Dr. G. T. Prior, W. C. Smith, Prof. H. H. Swinnerton, and Prof. W. W. Watts.

The first of the Chadwick public lectures on military hygiene was delivered by Gen. Sir John Goodwin, Director, Army Medical Service, on March 8 at the Royal Society of Arts, the subject being "Army Hygiene Prior to the Recent War." The lecturer dealt with the history of hygiene from the earliest times up to the period immediately preceding the war. The ravages wrought by disease during the various campaigns of the eighteenth and nineteenth centuries and their effects upon the armies in the field were detailed, and emphasis was laid on the lessons gained during the South African War in the prevention of disease. The various measures that have been elaborated to improve the health of the Army were outlined, and stress was laid on the good results accruing from education in hygiene of the Army as a whole. In India, during the years 1878–82, the number constantly sick among the European troops was 68·1 per 1000, with a mortality of 20·5; in 1912 the corresponding figures were 28·8 and 4·6 respectively. Immediately preceding the lecture Chadwick gold medals and prizes were presented to Surg.-Comdr. Edward L. Atkinson, R.N., and Brig.-Gen. W. W. O. Beveridge, A.M.S., for services in promoting the health of the men of the Navy and Army.

We are authorised to announce that H.R.H. the Prince of Wales has been graciously pleased to become the patron of the new British School of Archæology in Jerusalem, referred to in Nature of December 18 last (p. 398). The school has been formed for the study of the wide and important field of archæological research which has now been opened up in Palestine and the surrounding districts. The director, Prof. J. Garstang, of the University of Liverpool, is shortly proceeding to Palestine to complete the organisation of the school. As soon as the political destiny of Palestine has been fixed and a mandate formally assigned, it is hoped that a department of antiquities will be formed, under which the school looks forward to collaborating with the Palestine Exploration Fund in the excavation of an important site which has already been provisionally selected. Anyone who is interested in the school is invited to communicate with the secretary at 2 Hinde Street, Manchester Square, W.1.

The Natural History Museum Staff Association opened its series of scientific reunions for the current year by holding a double reunion on March 2 and 3. At the first most of the members of the International Council for the Exploration of the Sea were present, and the exhibits arranged in the board-room included many specimens—some being classical type-specimens—collected during the voyage of the *Challenger*. At the second reunion other exhibits were added, so that the whole series was of wide interest, and there was an attendance of nearly fifty visitors, amongst whom may

be mentioned Lord Rothschild, Sir Ronald Ross, Prof. E. B. Poulton, Lt.-Col. Winn Sampson, Mr. F. E. Beddard, Prof. J. Stephenson, Dr. H. O. Forbes, Mr. R. F. Scharff, Prof. J. P. Hill, Dr. S. Kemp, Dr. B. Daydon Jackson, Prof. J. Graham Kerr, Mr. S. Monckton Copeman, Mr. G. T. Bethune Baker, Dr. E. J. Allen, Dr. H. H. Thomas, Dr. C. Christy, and Prof. J. E. Duerden.

The half-yearly council meeting of the National Union of Scientific Workers, presided over by Mr. G. S. Baker, of the National Physical Laboratory, was held at University College on March 6. The rapid growth of the union has necessitated the appointment of a full-time secretary, and Major A. G. Church has been appointed to fill that office. The research committee in its report outlined the function of this body and that of the research council, which it is hoped will shortly be constituted. It will consider how best industry and public administration should be kept in close touch with the development of scientific knowledge, and ensure that the views and conditions of employment of scientific workers shall receive consideration from all bodies bringing forward schemes for research in science or for the administration of research. It was felt that the State should not subsidise industrial research associations unless such bodies display an anxiety to ensure that the direction of research shall be in the hands of those who have shown capacity for leadership in scientific work. A report on patent rights presented by Mr. A. A. Griffith emphasised the opinion "that the only satisfactory way of remunerating salaried inventors is to pay them adequate salaries; a salaried inventor receiving an adequate salary should have no claim whatever to any extra payment because his work proves unexpectedly remunerative." On the motion of Miss A. B. Dale, the council unanimously agreed to "protest strongly against the differential treatment of men and women as regards the method of recruitment to the Civil Service and the salary scales offered therein as recommended by the Reorganisation Sub-Committee of the Civil Service National Whitley Council."

February was unusually warm over the southern portion of the British Isles, and at Greenwich Observatory the mean temperature for the month was 43·9°, which is 4° above the normal; the mean, however, was higher in 1914, when it was 44·9°, and the means of both maxima and minima readings were also higher. There were four days with a shade temperature of 60° or above, whilst there is no previous February at Greenwich with more than two such warm days since 1841, and in all only seven days as warm during a period of seventy-nine years. Frost n the shade only occurred on four nights during the month, and the lowest temperature was 27°. The duration of bright sunshine was eighty-seven hours, which is thirty hours more than the normal, and here were three days at Greenwich with eight hours and more of sunshine. Rainfall was much below the normal, and in London there was no day during the month with a fall of 0·1 in.; the total measurement and 1896. Rain was measured only on eight days. The whole winter, December, January, and February, has been unusually mild over England, and at Greenwich the mean temperature for the three months was 42·8°, which is 3·5° warmer than the average for sixty years. The winter of 1915–16 was slightly warmer, and the winter of 1898–99 was warmer by about 1°. The warmest winter during the last eighty years, 1868–69, was warmer than the winter just ended by nearly 2°.

In view of the prevalence of disease amongst honey-bees during recent years, it has become a matter of practical importance to be able to distinguish with certainty between individuals which have died from disease and those the death of which is merely the result of old age or exhaustion. Mrs. Pixell-Goodrich contributes an interesting paper on this subject to the *Quarterly Journal of Microscopical Science* (vol. lxiv., part 2). It appears that during the summer, when actively engaged in collecting honey and pollen, the worker-bees very soon wear themselves out and die a natural death at the age of about six weeks. Senescence—or perhaps one should rather say exhaustion from over-exertion—is accompanied by well-marked and easily recognisable changes in the nerve-cells of the "brain." The cytoplasm of these cells undergoes gradual reduction in quantity, until only a vestige remains around the nucleus. The examination of the nerve-cells appears to be the most trustworthy method yet proposed for determining the age of bees, but, unfortunately, it involves a considerable amount of labour in the case of each individual examined.

The Bulletin of the Bureau of Standards for July 12, 1919, contains the results of the measurements of the index of refraction of air for wave-lengths 2000 to 10,000 tenth metres at different temperatures and pressures made by Messrs. W. F. Meggers and C. G. Peters to meet the demands of modern accurate spectroscopy. The Fabry and Perot interferometer was used in the measurements, the plates being of glass or quartz 4·2 cm. in diameter and 0·6 to 0·8 cm. thick. They were rendered partially reflecting by films spluttered from a metallic cathode *in vacuo*. Iron or copper arcs and neon or argon tubes served as sources of light. The interference rings were photographed and the diameters of the first three measured. Between the limits of pressure used—73 to 76 cm.—the refractive index was found proportional to the pressure. The variation of the index with temperature between 0° C. and 30° C. is not sufficiently well represented by the usual $\mu - 1$ proportional to density law. The index of refraction at normal temperature and pressure is given by the equation $\mu^2 - 1 = \frac{0{\cdot}0005738\lambda^2}{\lambda^2 - 595260}$, which shows no sign of an appreciable absorption band in the infra-red part of the spectrum.

The annual report of the Institution of Mechanical Engineers gives particulars of the various researches which are being carried on under the direction of the council for the year:—Alloys, 220*l.*; steam-nozzles, 150*l.*; hardness tests, 150*l.*; and cutting tools, 100*l.* The alloys research has been carried on at the National Physical Laboratory, and the eleventh report will be presented at an early date. The construction of the experimental apparatus for the steam-nozzles research has been further delay for lack of funds, but help has been promised by a grant of 500*l.* from the Turbine Blade Research Committee of the British Electrical and Allied Manufacturers' Association. It is intended to erect the apparatus at the Dickinson Street Power Station, Manchester, and the experiments will be conducted under the supervision of Prof. G. Gerald Stoney and Mr. S. L. Pearce. Hardness tests have been carried out at the National Physical Laboratory by Dr. T. E. Stanton, and it is hoped that reports will be presented this year. A bibliography on cutting tools is being prepared by Mr. G. W. Burley, and it is proposed to collect information from makers and users of cutting tools. The work of the wire-ropes research committee has been considerably delayed owing to the war; arrangements have now been made for experimental work to be carried out at Woolwich Polytechnic by Dr. W. A. Scoble. The work of the refrigeration research committee has been suspended since 1914; it is hoped that investigations may be made shortly into the physical properties of the substances used in refrigeration.

A catalogue (No. 357) of rare books and manuscripts has just been issued by *Messrs. Bernard Quaritch, Ltd.*, 11 Grafton Street, W.1, and is worthy of perusal. It is of a fairly general character as to the subjects, but two sections will appeal especially to readers of Nature, viz. those dealing with natural and physical sciences (21 pp.) and with periodicals (13 pp.). Many scarce volumes and long runs are to be found in these. The price of the catalogue is 1*s.* We notice that Messrs. Quaritch are about to begin the publication of the *Journal of Pomology*. It will appear at quarterly intervals under the editorship of Mr. E. A. Bunyard, who has secured the promise of assistance from many experts.

An illustrated book on "Weeds of Farm Land," the work of Dr. Winifred E. Brenchley, of the Rothamsted Experimental Station, is to be published by *Messrs. Longmans and Co.* It will deal with various aspects of the weed problem, but especially with the relations existing between weeds and the soils and crops with which they are chiefly associated. A survey will be given in the volume of the present position with regard to the questions of prevention, eradication, and uses of weeds, also of their habits and method of distribution and the vitality of buried weed-seeds.

Readers of Nature who are interested in ancient herbals and old-time gardening and agriculture should see Catalogue No. 81 of *Messrs. Dulau and Co., Ltd.*, 34 Margaret Street, W.1, in which are to be found particulars of 1000 works dealing with these and other scientific subjects, many the property of the late Sir Frank Crisp. An unusual feature is a collection of volumes on sundials.

Our Astronomical Column.

Bright Meteors.—A fine meteor was observed on February 17 at 8h. 52m. by Mr. F. Wilson, Totteridge, and Mr. S. B. Mattey, Plumstead. It was brighter than Jupiter, and moved very slowly from a radiant at $72^\circ+43^\circ$ near α Aurigæ. The approximate height of the object was 67 to 30 miles, path 53 miles, and velocity 10 miles per second. It passed from over south-west of Needham Market to Woodbridge.

Another very brilliant meteor was observed on February 27 at 8h. 58m. by Mrs. Wilson and Miss Cook, and also by Mr. S. B. Mattey at Plumstead. The radiant was at about $17^\circ+8^\circ$ near the horizon 9° north of west. The height of the object was 53 to 49 miles, path 95 miles, and velocity 12 miles per second. It passed from over Lydd, Kent, to about 50 miles east of Calais, France. Fireballs from Auriga and Pisces have been recorded in previous years at about the same dates as those of this year.

Total Light of the Stars.—The late Prof. Newcomb laid stress on the desirability of obtaining this observational constant, and several attempts have been made to do so. The latest is by Mr. P. J. Van Rhijn (Contributions from Mount Wilson Observatory, No. 173). This paper shows that there is illumination, which is probably due to (*a*) a faint extension of the zodiacal light, including the Gegenschein, and (*b*) faint auroræ. The amount of these was found by observing regions of the sky remote from the Galaxy and assuming that the starlight in these regions could be inferred from the observed number of stars of each order of magnitude. The amount of each of these is discussed, and it is concluded that the total amount of light received from all the stars in both hemispheres is equal to 1440 stars of magnitude 1·00, Harvard visual scale. The following are the values of extra-galactic sky brightness per square degree found by different observers, the unit being a star of magnitude 1·00:—Newcomb, 0·029; Burns, 0·050; Abbot, 0·075; Yntema, 0·140; and Van Rhijn, 0·130. The magnitude of the full moon is about -12; it is, therefore, about 140,000 times as bright as a star of magnitude 1·00, or a hundred times as bright as all the stars together.

Star Clusters.—*Scientia* for March contains the fourth of a series of papers on clusters by Dr. Harlow Shapley. Dr. Shapley quotes a remark that distance introduces simplification in our study of the clusters; it makes apparent magnitudes equivalent to absolute ones, since all the components are at practically the same distance from us. He then proceeds to consider the local cluster to which the sun belongs, which he regards as defined by Dr. Charlier's research on the distribution of the B stars in space. The conclusion was that they form a flattened cluster, with greatest diameter 4000 light-years. This is supposed to be merely one unit out of many that go to make up the galaxy. Its equatorial region is marked by a zone of bright stars, to which attention was directed by Sir J. Herschel and Dr. B. A. Gould. Its plane is inclined some 15° to the medial line of the galaxy. Dr. Charlier puts the centre of the local cluster in Carina, some 250 light-years from the sun; while Dr. Shapley makes the distance only 150 light-years. Since from analogy the cluster is likely to be moving with respect to its neighbours, the two star-drifts would appertain respectively to cluster and non-cluster stars. It is left an open question to which category the sun belongs. Viewed telescopically from the Hercules cluster, the local cluster would seem to be mainly composed of B stars, with a smaller number of giant M ones. The sun would be of the twentieth magnitude, too faint for visual observation, though it might be photographed.